



ELUSIVE MARTENS

By Margaret Gillespie

I sometimes wonder what it would be like to be part of a large family. The “weasel” family, or Mustelidae, has many members of varying sizes, which inhabit different natural communities. Some may be familiar to most, like the small but feisty short-tailed weasel and its larger counterpart, the long-tailed weasel. These two are the changeable ones, sporting white coats in winter, while converting to brown in summer. Then there is the fisher, an arboreal acrobat and predator of porcupines. Mink and otter surprise us by swimming nonchalantly along frigid winter waterways. But we may need to be introduced to the American marten, *Martes americana*, unknown and unseen by most. Some call this creature the pine marten, which makes the nomenclature even more complicated because pine martens are a European species. Let’s settle on American marten.



Martens vary considerably in color but in general their faces and cup-shaped ears are light brown in contrast to their reddish brown bodies. One thing is unique to each individual ... the shape and color of their throat patches. Many throat patches are a surprising rusty orange, while others are much lighter. If you are used to seeing weasels, martens are considerably larger, ranging in weight from two to three pounds. The males, larger than females, extend in length two to two and a half feet, including the tail.

In New Hampshire, martens are a northern species, generally found from the White Mountain National Forest, extending to the Canadian border. These are creatures that thrive in the spruce-fir forests at high elevations. They excel in bounding over deep snow, which keeps coyotes and foxes at bay. Large paws give martens the snowshoe advantage. They are also adept at diving through soft snow and hunting in the subnivean layer,

that area beneath the snow’s surface next to the ground where rodents are safe from many other predators. Martens also spend considerable time in trees. Maneuvering through the canopy is greatly enhanced by an adaptation of their hind feet. They can rotate them to the rear like squirrels do, enabling martens to be perfectly comfortable and swift descending trees headfirst. Primarily nocturnal, martens often retreat to a convenient tree cavity during the daytime.

To tap into some intensive personal experience and research with these elusive martens, I contacted Jillian Kilborn, a wildlife biologist with the New Hampshire Fish and Game Department at her Lancaster office. After starting her career studying these creatures 17 years ago, she is still avidly involved in marten research. Martens were on the list of threatened species in New Hampshire until 2017 and still remain a species of special concern. Jillian’s excitement about these creatures is contagious.

Jillian was involved in a study of the impact of wind energy development in northern New Hampshire on martens. The high elevation spruce-fir forest locations needed for wind turbines are also ideal marten habitat. After construction, martens initially used these mountain areas less, but over time returned there to hunt again, although to a lesser extent. In a surprising development, marten competitors like coyotes, foxes, and fisher that previously couldn’t reach the highlands, were suddenly

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SCHOOL VACATION PROGRAMS

Plan ahead and get Nearer to Nature with February vacation week programs: Winter Bird Banding, Wild Winter Walks, Animal Tracking, and Ice Fishing!
See page 7 for details.



FORGING TRAILS: BEHIND THE SCENES OF AUTUMNWATCH NEW ENGLAND



I hope you all got a chance to see Autumnwatch New England on PBS (October 17, 18, and 19). It was an enormous thrill for us to be part of the production and see how it all came together. Every one of the 100-plus crew were a delight. They were incredibly professional, dedicated, hardworking, and friendly.

Putting on multiple, live, one-hour TV shows from a remote location takes a huge amount of planning and logistical support (and six and a half miles of cable). In addition to the three 8:00 p.m. PBS shows, there were four live BBC shows at 3:00 p.m. our time (8:00 p.m. UK time). This meant that on two days we started the BBC rehearsal at 11:30 a.m., took a break for lunch, set up for the live show at 3:00 p.m., rehearsed for the PBS show at 4:45 p.m., broke for dinner, and were ready for the live show at 8:00 p.m.

Twenty remote-controlled cameras and dozens of infrared lights were positioned here at the Science Center and at Camp Deerwood (where the production trucks and studio were located) to capture any wildlife we could find . . . and boy did they deliver.

The picnic table feeder was a 24/7 snack bar for squirrels and songbirds during the day and raccoons and gray foxes at night. It even attracted a large black bear. Out at the "Carcass Cam" (in the meadow behind the marsh boardwalk) the deer carcass (provided by New Hampshire Fish and Game from road kill) brought in a gray fox and three coyotes who stripped it bare in just a couple days. The deer seen on air was carcass number two. The first one delivered the week before was eaten so quickly by the coyotes and a huge male bear that we had to request a second one. The views of the three coyotes were some of the highlights of the entire week.

Another high point for me involved the beaver pond footage. As we worked on story ideas over the past year, I was determined that beaver (and their amazing pond creations) would be highlighted. Once the BBC crew got here, I had to deliver. The first pond I directed them to wasn't quite right. I came up with Plan B – a pond in Salisbury, New Hampshire, formerly home to an Osprey pair, where during my annual nest checks, I became friends with owners of a lovely home overlooking the pond. When I took videographer Mark Yates there before the shows, not only did he get lots of beaver footage, but also after dark, using the thermal cameras, he captured amazing photos of multiple moose and even two coyotes. One night, he returned with BBC host Gillian Burke and they recorded truly extraordinary footage of a bobcat walking along the shore of the pond.

I am so proud of the shows and how they showcased the wildlife of New Hampshire and the beauty of Squam Lakes.

To see a clip of the bobcat at the beaver ponds:

<https://www.bbc.co.uk/programmes/p06pcpjt>

To see one of our Saw-whet Owls: <https://www.bbc.co.uk/programmes/p06nsr42>

To see red squirrel Fight Night: <https://www.bbc.co.uk/programmes/p06pljx7>

To see full episodes of the PBS shows:

<http://www.pbs.org/autumnwatch-new-england/home/>



2019 NATURE TOURS: SCOTLAND

May: Highlands & Hebrides. Spaces still available.
June: Northern Highlands (new itinerary) SOLD OUT
Visit nhnature.org/programs/nature_tours.php to view itineraries.

Contact Iain MacLeod for information.

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Squam Lakes Natural Science Center is a non-profit educational institution incorporated in 1966 as a charitable organization under statutes of the State of New Hampshire with its principal place of business in Holderness. Its mission is to advance understanding of ecology by exploring New Hampshire's natural world.

Tracks & Trails is a regular publication of Squam Lakes Natural Science Center distributed to members and contributors. Comments are welcomed by newsletter editors Janet Robertson and Amanda Gillen.

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STAFF PROFILE

SHARON WARGA

Sharon's title of Operations Manager does not begin to cover the varied and important roles she plays. Not only is she on the frontline helping visitors on the phone or in person, she manages all computer systems and technology, she oversees Lake Cruise operations, and is even the Incident Commander as part of the safety and risk management team. She does it all efficiently and with a smile.



Sharon greeting visitors at Pollinator Party in July 2017.

How did you first get involved?

I moved to New Hampshire in 2008 from Connecticut and first visited the Science Center in May 2009 on New Hampshire Day. I still have the fleece I wore that day. I accidentally washed it with the Admission sticker still attached and have never been able to completely get rid of the mark that it left. As we walked around the Science Center that day, I have a clear memory of saying to my husband, "How cool would it be to work here?"

In 2014, while booking a Science Center Outreach program for the library where I worked, I noticed a job opening for the position of Operations Manager on the Science Center's website and decided to apply. The rest is history!

What has surprised you most about working here?

Every day is different and I never quite know what I'll end up doing on any given day.

What do you find most challenging?

Trying to predict the weather and decide whether or not to cancel a lake cruise. During the summer, I usually have three different weather radars open on my computer.

What might we be surprised to know about you?

My dream job in high school was to write for *Fangoria* magazine. I still love a good horror movie.

What would you tell someone who is thinking about donating or volunteering?

Go for it! All the staff here really appreciate and value our volunteers and donors. You make our jobs a little easier!

What do you do when you aren't working?

I'm a big crafter. Currently, I'm into making painted floor cloths. I also recently learned to ski so during the winter I can usually be found skiing on my days off.

Sharon grew up in the small town of Bethlehem, Connecticut and received her B.A. in Art History from Southern Connecticut State University. Previously, she was the Director of the Minot-Sleeper Library in Bristol. She previously worked at the University of New Hampshire Law Library in Concord and the Sterling Memorial Library at Yale University. Sharon and her husband live in Plymouth with their five chickens, two dogs, and one cat.

NEWSBRIEFS



- Hannah O'Brien joined Blue Heron School staff this fall as Associate Teacher. She has a B.A. in Liberal Arts from Thomas Aquinas College, Santa Paula, California. Hannah later earned a Primary Guide Montessori certification for ages 3 to 6 at the AMI Southwest Institute of Montessori Studies in Arizona. In her free time, Hannah enjoys singing, playing violin, reading, hiking, biking, baking, and gardening.



- Dylan Parker first came to Blue Heron School as a Plymouth State University college student completing an internship. When his internship ended, he stayed on as a paid assistant in the classroom. This fall he returned to be an Assistant Teacher, floating between the two classrooms in the mornings and teaching a small group in the afternoon, who stay for the full school day. Dylan is interested in pursuing more early childhood education.

- A \$2,600 ee360 mini grant was awarded to the Science Center in support of the First Guides Community Action Program. The award was announced at the NAAEE Conference held in October in Spokane, Washington. Education Director Audrey Eisenhauer and Volunteer Manager Carol Raymond attended.

- Education Director Audrey Eisenhauer and Naturalist Jeremy Philips attended the New England Environmental Education Alliance Conference in Fairlee, Vermont in early November.

- The show went on, despite a dark and stormy night on October 27! Skits for the annual Halloween Hoot 'N Howl were moved inside or under cover due to a nor'easter's cold temperatures and high winds. Snow and rain came through earlier in the day and unfortunately, scared away many who signed up. Our wonderful volunteers did show up to help. Guests enjoyed treats and drinks provided by Dunkin Donuts, Plymouth; E.M. Heath, Holderness; Hannaford Supermarkets, Meredith; Tootsie Roll Industries; and many talented volunteer bakers. Volunteers from Hypertherm put up decorations and carved pumpkins donated by Moulton Farm and staff members.

NATURALIST'S CORNER

BENEATH THE ICE

By Jeremy Phillips

Smiles, laughter, slipping, and sliding on the ice. Have you ever stopped to wonder what is taking place beneath you? How do the plants and animals of a lake or pond survive?

Many of us might first think of fish, patrolling beneath the ice. Darkness looms as the ice builds and the sound of popping ice thunders through the dense, coldwater. The thicker the ice and snow, the darker it becomes. How do fish survive?

To dive into this question, let's look from a wide angle. Energy flow starts with the sun. Phytoplankton take the sunlight and turn it into energy through photosynthesis. Zooplankton eat the phytoplankton. The zooplankton are eaten by small invertebrates. The energy flows up the food pyramid to those large fish species like lake trout (*Salvelinus namaycush*), various bass species, landlocked salmon (*Salmo salar*), and other large fish.



Brook Trout



Yellow Perch

Over the course of a year in the life of a lake, a harsh landscape is presented. In summer, the lake water is separated by different densities. The warmest and least dense is at the top (about 20 degrees Celsius) and the coolest and densest is on the bottom (about 6 degrees Celsius). As cooler air brings water temperatures down in the fall, the top layer cools and becomes the same density as at the bottom, which causes nutrients to mix, also known as lake turnover. As ice forms on top of the lake, turnover stops because the ice prevents the wind from mixing the water. Once spring comes, the ice melts and turnover occurs again, until the sun warms the top layers, restoring the different water densities on the top and bottom.

Just like their terrestrial counterparts, aquatic plants need nutrients. Phytoplankton, unlike their land-based counterparts, are suspended in water 8 to 15 meters deep. They depend on the nutrients that mix during those two lake turnover periods. In winter, it can be dark because of ice and snow, making for pretty rough conditions for phytoplankton.

Phytoplankton, being able to turn the sun into food, are the base energy for all living things in a lake. Top predators, like lake trout may not eat the plankton directly, but without them, they would not survive. Lake trout have their own special adaptations. Fish are cold-blooded, meaning they are the same temperature as their surroundings. The colder they are, the more their metabolism slows. Warmwater species, like bass, seek out the warmest water they can find, which is usually at the bottom of the lake in the winter. Coldwater species are active throughout the water column and can catch a variety of prey species. They use their torpedo-shaped body, sharp teeth, and aggressive behavior to catch anything from smaller fish to tiny insects.

The longer winter goes on, the more the nutrient levels drop. When plankton start to struggle and ice tightens its grip, the oxygen level wanes. Depending on the size of the lake or pond, this threatens the survival of any living thing. The plankton will shut down, settle to the bottom of lake, and wait for easier times. Many aquatic plants die back, keeping their roots intact until more sunlight is available.

Most fish remain somewhat active in winter even if they prefer warmer water. Some are able to utilize more area of the lake in coldwater seasons. Others prefer coldwater to warmwater and are most active in winter. Burbot, or cusk, (*Lota lota*) are the only species of freshwater fish known to lay their eggs under the ice in mid to late winter. They can lay over 1,000,000 eggs.

If you are out on a lake or pond this winter, having fun, slipping, sliding, and skating around, take a moment to think about the struggle for life taking place beneath the ice.

We are grateful to the Meredith Rotary Club for their annual donation of fish from the Meredith Ice Fishing Derby, which is used to feed the otters and other creatures. The next derby is February 9 and 10, 2019.

SAVE THE DATE

2019
Summer Splash
Sunday, July 21
at The Barn on the Pemi

New Day
New Location

WISH LIST

Folding wooden clothes dryers
2 or 4-drawer file cabinet
Natural sisal rope
String lawn trimmer
Dog crates
Garden treasures: tools, carts, garden art, pots

Wagons for moving plants at Kirkwood Garden
Loppers and pruners for invasive species removal
Intern Cottage:
knife sharpener, toaster oven, fans

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KIRKWOOD GARDENS PLANT SPOTLIGHT

By Brenda Erler

Maidenhair Fern *Adiantum pedatum*

Culture: Easily grown in average, medium moist, well-drained soil in part shade to full shade

Height: 1 to 2 feet

A beautiful fern with delicate, light green filigree foliage held in horizontal fans on thin black stalks. It creeps by underground rhizomes to slowly spread and colonize an area. Useful in shade and woodland gardens. Effective as an edger along paths and looks nice when combined with large-leaved plants such as Hostas.

Kirkwood location: Several areas throughout the upper garden including to the right of the garden steps, around the pipe fountain, and mid-bed on the driveway side.



Photo courtesy flickr.com/JoshuaMayer

White Beach Rose, Rugosa Rose *Rosa rugosa* 'Alba'

Culture: Best in moist, slightly acidic soil in full sun but will tolerate sandy, gravelly, and poor soils as long as there is good drainage. Deadhead spent flowers for re-bloom throughout the season. Prune in late winter or early spring before the buds break.

Height: 4 to 6 feet with a 3 to 5 foot-spread, but can be controlled with heavy pruning. Tends to send out suckers, so plan to either tame them or plant the shrub in an area where spreading is not a problem.

This prickly rose produces beautiful single white, fragrant blossoms for months throughout the season. Stop deadheading the blossoms by late summer to allow the production of its fleshy, edible tomato-red hips. A good winter wildlife food plant. Attractive to bees and butterflies. Great as a hedge, screen, or specimen plant.

Kirkwood location: upper garden along Route 3.



Plant Spotlight and Kirkwood Gardens are sponsored by Belknap Landscape Company, Inc. www.belknaplandscape.com

FROM THE HERON'S NEST

By Laura Mammarelli

Blue Heron School children collected leaves while they were enjoying some beautiful autumn weather days. Then they took the leaves inside to use for more activities. They learned the different shapes of the leaves, the parts of the leaf, and made art with leaves of beautiful colors and shapes.

Blue Heron School, a nature-based Montessori school for children ages three to six, operates Monday through Friday, 8:30 a.m. to 1:00 p.m., or 8:30 a.m. to 3:30 p.m., September to June. For more information please visit www.nhnature.org/programs/blue_heron_school.php or contact Laura Mammarelli, Blue Heron School Director, at 603-968-7194 x 40 or blueheron@nhnature.org.



CALENDAR OF PROGRAMS & EVENTS

Advance registration is required by noon the day before the program. If minimum enrollment is not met, programs may be cancelled. Walk-ins may be accommodated if space is available.

WILD WINTER WEEKENDS

Wild Winter Walk: Guided Tours of the Live Animal Trail For adults and families with children ages 6 and up

Have you ever wondered what happens to the animals at the Science Center during the winter? Most of them stay in the same place, just as they would in the wild. Join a staff naturalist for a guided walk on the live animal exhibit trail to see our animal ambassadors dressed in their winter coats and discuss how these native animals are well-adapted for winter in New Hampshire. If needed, snowshoes are available at no extra cost or bring your own. Children must be accompanied by an adult. Dress to be outdoors with snow boots, hats, gloves, and warm layers.

Cost: \$8/member; \$10/non-member

Winter Bird Banding For all ages

Looking for a chance to see wild birds up close? Join us to find out why and how we capture, band, and release birds that gather at our winter feeding station. Children must be accompanied by an adult. Time will be spent indoors and outdoors; bring warm layers, hats, and gloves.

Cost: \$8/member; \$10/non-member

***MAKE A DAY OF IT! Attend both a Wild Winter Walk and a Winter Bird Banding. Bring your brown bag lunch for the time in between. Advance Package Discount: \$11/member; \$15/non-member for both programs on the same day.**

JANUARY

<p>JANUARY 3 THURSDAY 10:00 to 11:30 a.m. For ages 4 to 6</p>	<p>HOMESCHOOL SERIES: Using Our Five Senses - Sound 10:00 to 11:30 a.m. For ages 4 to 6 How do we understand and interpret the world? With our senses of course! Learn all about your senses and put them to work as you explore what types of information we get from each one. Learn how animals use their senses. The focus is on a different sense each month and the last day is a celebration of them all. An adult must participate with children at no additional cost. Cost: \$9/member child; \$11/non-member child</p>
<p>JANUARY 3 THURSDAY 10:00 to 11:30 a.m. For ages 7 to 10</p>	<p>HOMESCHOOL SERIES: Be A Scientist! - Ecology 10:00 to 11:30 a.m. For ages 7 to 10 There are many different types of scientists – from Dendrologists to Ornithologists and don't forget Entomologists too. Become a scientist as you develop and test predictions, and participate in and conduct experiments. Learn how to use keys and books to identify living and nonliving ecosystem components that make New Hampshire unique. Investigate a different scientific field of study each month. An adult must participate with children at no additional cost. Cost: \$9/member child; \$11/non-member child</p>
<p>JANUARY 5 SATURDAY 9:00 a.m. to 12:00 p.m. All ages</p>	<p>Bird Banding Open House For over 30 years we have started the New Year off with a bird banding open house. For tracking purposes, the US Fish & Wildlife Service officially designates that all birds become a year older on January 1. Come celebrate their birthday and the New Year with us. Find out all about banding and, with luck, help band and release some hardy feathered creatures. Cost: No charge to attend but reservations are requested.</p>
<p>JANUARY 5 SATURDAY</p>	<p>Wild Winter Walks: Guided Tours of the Live Animal Trail 1:00 to 3:00 p.m.</p>
<p>JANUARY 12 SATURDAY</p>	<p>Winter Bird Banding 10:00 a.m. to 12:00 p.m. Wild Winter Walks: Guided Tours of the Live Animal Trail 1:00 to 3:00 p.m.</p>
<p>JANUARY 19 SATURDAY</p>	<p>Wild Winter Walks: Guided Tours of the Live Animal Trail 1:00 to 3:00 p.m.</p>
<p>JANUARY 26 SATURDAY 7:00 to 10:30 a.m. For adults and families with children ages 9 and up</p>	<p>Ice Fishing for Families Trek out onto the ice to experience a classic winter activity – ice fishing! We will supply the instruction and all the equipment; you supply the curiosity and enthusiasm. Learn what fish are doing under the ice and how and where to catch different species of fish. <i>Special Instructions: Children must be accompanied by an adult. Adults require a fishing license purchased in advance. Wear snow boots, and many, many warm layers, hats, and gloves. Bring an extra pair of gloves, snacks, a thermos with a hot beverage, and a camp chair.</i> Cost: \$15/member; \$18/non-member</p>
<p>JANUARY 26 SATURDAY</p>	<p>Winter Bird Banding 10:00 a.m. to 12:00 p.m.</p>
<p>JANUARY 27 SUNDAY</p>	<p>Wild Winter Walks: Guided Tours of the Live Animal Trail 10:00 a.m. to 12:00 p.m.</p>

FEBRUARY

FEBRUARY 2 SATURDAY	Winter Bird Banding 10:00 a.m. to 12:00 p.m.
	Wild Winter Walks: Guided Tours of the Live Animal Trail 1:00 to 3:00 p.m.
FEBRUARY 7 THURSDAY	HOMESCHOOL SERIES: Using Our Five Senses - Sight 10:00 to 11:30 a.m. For ages 4 to 6 <i>See description for January 3.</i>
	HOMESCHOOL SERIES: Be A Scientist! - Ornithology 10:00 to 11:30 a.m. For ages 7 to 10 <i>See description for January 3.</i>
FEBRUARY 9 SATURDAY	Wild Winter Walks: Guided Tours of the Live Animal Trail 10:00 a.m. to 12:00 p.m.
FEBRUARY 16 SATURDAY	Winter Bird Banding 10:00 a.m. to 12:00 p.m.
	Wild Winter Walks: Guided Tours of the Live Animal Trail 1:00 to 3:00 p.m.
FEBRUARY 23 SATURDAY	Wild Winter Walks: Guided Tours of the Live Animal Trail 10:00 a.m. to 12:00 p.m.
SCHOOL VACATION WEEK	
FEBRUARY 26 TUESDAY	Winter Bird Banding 10:00 a.m. to 12:00 p.m.
	Wild Winter Walks: Guided Tours of the Live Animal Trail 1:00 to 3:00 p.m.
FEBRUARY 27 WEDNESDAY 10:00 a.m. to 12:00 p.m. For families with children ages 5 and up	Animal Tracking Adventure Many animals are active all winter long. Join us to venture through fields and forests to discover and identify as many signs of wildlife activity as we can find. Finish by meeting one of our animal ambassadors that stays active all winter. <i>Special Instructions: Children must be accompanied by an adult. Time will be spent indoors and outdoors; wear snow boots, and bring warm layers, hats, and gloves. If needed, snowshoes are available at no extra cost or bring your own.</i> <i>Cost: \$8/member; \$10/non-member</i>
FEBRUARY 28 THURSDAY	Ice Fishing For Families 8:30 a.m. to 12:00 p.m. For families with children ages 9 and up <i>See description for January 26.</i>

MARCH

MARCH 1 FRIDAY	SCHOOL VACATION WEEK: Wild Winter Walks: Guided Tours of the Live Animal Trail 10:00 a.m. to 12:00 p.m.
MARCH 2 SATURDAY	Winter Bird Banding 10:00 a.m. to 12:00 p.m.
	Wild Winter Walks: Guided Tours of the Live Animal Trail 1:00 to 3:00 p.m.
MARCH 7 THURSDAY	HOMESCHOOL SERIES: Using Our Five Senses - Taste 10:00 to 11:30 a.m. For ages 4 to 6 <i>See description for January 3.</i>
	HOMESCHOOL SERIES: Be A Scientist! - Mammalogy 10:00 to 11:30 a.m. For ages 7 to 10 <i>See description for January 3.</i>
MARCH 9 SATURDAY	Wild Winter Walks: Guided Tours of the Live Animal Trail 1:00 to 3:00 p.m.
MARCH 16 SATURDAY	Winter Bird Banding 10:00 a.m. to 12:00 p.m.
	Wild Winter Walks: Guided Tours of the Live Animal Trail 1:00 to 3:00 p.m.
MARCH 24 SUNDAY	Wild Winter Walks: Guided Tours of the Live Animal Trail 10:00 a.m. to 12:00 p.m.
MARCH 30 SATURDAY	Winter Bird Banding 10:00 a.m. to 12:00 p.m.
	Wild Winter Walks: Guided Tours of the Live Animal Trail 1:00 to 3:00 p.m.

CALENDAR OF PROGRAMS & EVENTS CONTINUED

APRIL

APRIL 4
THURSDAY

HOMESCHOOL SERIES: Using Our Five Senses - Celebrate All Five Senses!

10:00 to 11:30 a.m. | For ages 4 to 6

See description for January 3.

HOMESCHOOL SERIES: Be A Scientist! - Entomology

10:00 to 11:30 a.m. | For ages 7 to 10

See description for January 3.

BUSINESSES IN OUR STATE EDUCATION THANK YOU FOR YOUR SUPPORT!

Many local businesses provide support through memberships, sponsorships, and in-kind contributions of goods and services every year. This year these generous businesses helped to make the Science Center's education programs possible.

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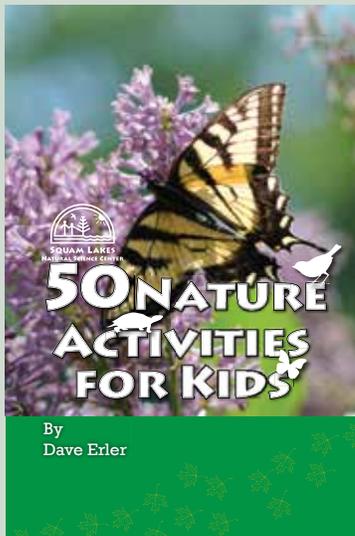
2018 Business In-Kind Donors: Aubuchon Hardware, Moultonborough, Belknap Landscape Company, Biederman's Deli & Pub/ Chase Street Market, Bob's Shur-Fine Market, Bryant's Pipe Connections, Charles River Laboratories, Coca Cola Bottling Company of Northern New England, Country Ladybug Greenhouse, Dirty Worm Greenhouse & Nursery, Donovan Tree Experts, Dunkin Donuts, E. M. Heath Supermarket, Forever Green, GreenTek Mapping Services, Hannaford - Plymouth and Meredith, Innisfree Bookshop, KINDSnacks, Lakes Region Tent & Event, Little Church Theater, Magic Foods Restaurant Group, Marie's Catering, Med Check Urgent Care, Megaprint, Meredith Rotary Club, Meredith Village Savings Bank, Mill Falls at the Lake, Moulton Farm, Mountain Breeze Farm, New Hampshire Music Festival, Osteria Poggio, Pemi-Baker Beekeepers Association, Petal Pushers Farm, Plymouth Animal Hospital, Polly's Pancake Parlor, Precision Lumber, Primo Water, Reconyx, Rockywold Deephaven Camps, Six Burner Bistro, Smith Orchard, Spider Web Gardens, Squam Boat Livery, Squam Bridge Landing, Squam Lake Marketplace, Stephens Landscaping Professionals, Tootsie Roll Industries, Van Berkum Nursery, Wayside Farm and Great Northern Berries, and Webster Lake Fishing Derby.

2018 Summer Splash: Many more businesses generously supported the 2018 Summer Splash held on July 21. For a complete listing, see page 9 of the fall 2018 *Tracks & Trails*, <http://www.nhnature.org/membership/newsletter.php>.

2018 Business Volunteer Groups: Hypertherm, J Jill, New Hampton School, Plymouth Regional High School, Plymouth State University Day of Service, Southern New Hampshire University, Tau Omega - PSU Chapter, Stonyfield Farm, and UNH Natural Resources Group.

We gratefully acknowledge all business supporters. Please notify Development Officer Kim Beardwood Smith if any listings are inaccurate or missing and to learn about 2019 sponsorship opportunities. Contact Volunteer Manager Carol Raymond for information about volunteering.

GREEN TIP: GET OUTSIDE!



Looking for some help with ideas to get your children connected to nature and the outdoors? Don't let them suffer from Nature Deficit Disorder.

At the Science Center's Blue Heron School there is a saying: "there's no such thing as bad weather." It's true. If you are dressed appropriately, being outdoors in all types of weather is fun. Blue Heron School students use nature as their playground jumping off rocks, balancing on logs, climbing trees, and exploring the ponds, streams, and woods of the Science Center.

You can encourage your own children to do the same in your backyard or local park. Senior Naturalist Dave Erler has taken his 40 years of experience at the

Science Center to create a step-by-step activity book for parents and children. *50 Nature Activities for Kids* includes fun ways to get outside and explore the natural world. The book is available to purchase online at <https://www.nhnature.org/programs/50natureactivities.php> or call 603-968-7194 x 7 and order for the holidays.

There are other ways to encourage outdoor time too. If you can, have your kids walk or bike to school. Send them outside to play after school every day for 30 minutes. Older kids can help with chores like gardening, raking leaves, and shoveling snow. And spend time outside with the kids; make it a family habit to enjoy outdoor activities together every weekend.

VOLUNTEER UPDATE: THANK YOU VOLUNTEERS!

A wonderful, amazing team of volunteers once again shared a huge array of skills and capabilities, and spirit! In 2017, 344 volunteers donated a total of 8,926 hours of service. There were 136 volunteers representing local organizations and schools: Hypertherm, J. Jill, New Hampton School, Plymouth Regional High School, Plymouth State University's Tau Omega, Southern New Hampshire University, and Stonyfield Farm.



Brenda Erler thanks Kirkwood Gardens volunteers.

The annual Parsons Volunteer Recognition Dinner is named for Natalie and Don Parsons, dedicated volunteers who donated many years of service. This year it was held at Waukegan Golf Course in September. The dinner was sponsored by Cross Insurance Agency and Patty Stewart Associates. It was catered by Marie Gerli of Marie's Catering. The event was bittersweet, as Natalie passed away in July just three days before her 95th birthday.

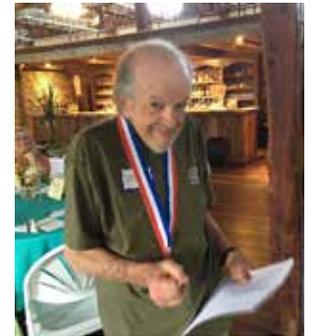
At the dinner, Board Chair Ken Evans recognized Kirkwood and Welcome Center Garden Volunteers for their service. Gardens and Exhibits Assistant Brenda Erler thanked the gardeners too. The main corps of gardeners includes: Rosie Angell, Celia Connolly, Gail Coolidge, Marilyn Creamer, Bob Curry, Carol Curry, Nancy Dailey, Sylvia Detscher,

Phee Grandbois, Susan Gurney, George Gurney, Liz Hager, Karin Karagozian, Linda Lee, Peggy Martin, Deb McNeish, Linda Michelson, Leslie Nicola, Karen Rosolen, Carol Stewart, Lea A. Stewart, Carol Thompson, Joey Tuveson, Joan Vicinus, Tracy Webster-Babcock, and Jan Welch.

"Volunteers Complete the Picture" in the Trailhead Gallery is updated yearly to show cumulative hours of volunteer service. Three volunteers achieved 200 or more donated hours in 2017: Rosie Angell, Rachel Cirincione, and Carolyn Murah. Chris Bird, Ken Evans, Liz Hager, Susan Jayne, Don Margeson, Missy Mason, and Deb McNeish advanced to the 500 hour level.

The President's Volunteer Service Award program encourages citizens to live a life of service. Executive Director Iain MacLeod presented Bronze Awards to Marguerite Crowell, Lisa Davis, John Egolf, Amber Gordon, Susan Gurney, John Lauzon, Wayne Martin, John McRae, Linda Michelson, Denise Moulis, Karen Rosolen, Ken Ruhm, Carol Stewart, and Lea A. Stewart for serving between 100 and 249 hours in 2017. Jim Barry and Ken Evans were awarded the Gold Award for serving 500 or more hours. Jim Barry was honored with the President's Lifetime Achievement Award for donating over 4,000 hours of service in his lifetime.

Many thanks to all volunteers who give their time and skills so generously to the Science Center. Their dedication and commitment are greatly appreciated!



Volunteer Jim Barry received the President's Lifetime Achievement Award.

FIRST GUIDES COMMUNITY ACTION PROGRAM

The First Guides teen volunteer program began in 2007 with a grant from the Bea and Woolsey Conover Fund through the New Hampshire Charitable Foundation. The first group met in 2009. To date, more than 100 teens have successfully completed the program, with many continuing as First Guides for several years until they were able to become adult volunteer docents. Several First Guides from 2009 remain in touch. Their success stories include one First Guide who completed a degree in animal behavior, traveling to Australia and Nepal during her studies. Another went to Africa to study entomology, and another graduated from the University of Edinburgh with a degree in Biology. The First Guides program is unique in the Lakes Region, giving teens opportunities to explore their interests in natural science, to experience up-close interactions with wildlife, to gain training in public speaking and other skills, and to increase their knowledge about New Hampshire's ecology.

The goal of the new First Guides Community Action Program is to engage teen volunteers in projects focused on local environmental issues. The teens assist community-based projects and create stories about the projects and their engagement. By sharing their stories, First Guides become leaders, role models, and an inspiration for others in the community to take action on environmental issues. Their stories will be shared with the public through social media pages and in publications. In 2018, four projects were presented to First Guides by three partners: the New Hampshire Bat Colony Count, Squam Lakes Association, and the Loon Preservation Committee. In addition, two Science Center projects were offered. In 2019, through a grant by the North American Association of Environmental Educators ee360 initiative, additional training in videography by EVP Marketing will be funded.

2019 VOLUNTEER TRAINING

Docent Training: June 17 to 21, 4:00 to 8:00 p.m.

First Guide Training: June 26 to 28, and July 1, 10:00 a.m. to 4:00 p.m.

Check for details at nhnature.org/who/volunteer.php.

OPENING A WINDOW TO THE NATURAL WORLD

Joyful Giving: A Family Tradition



Mega jackpot lotteries have been in the news recently. Did you daydream about what you might do if you won millions?

You might gather your family and discuss the things that mean the most to you. But no matter how much you have to give, talking about charitable giving and making decisions together is a great way for families to share values and interests, especially at this joyful time of year. Giving is learned by example and children who learn from their families often carry on a philanthropic tradition as adults.

We know we compete with many other worthy organizations for your philanthropy. I hope the Science Center is a special place for your family; a place you care about, visit often, and want to support. The best way to show your support is through a contribution to our Annual Fund now.

Your gift will go to work immediately and help us to deliver up close inspirational nature moments for all ages, through trails visits, lake cruises, and programs. Your donation will also help to care for and feed all the live animals and to maintain buildings, trails, and exhibits.

Please continue or start a family tradition by joining others who believe in and support what we do.

Opening a Window to the Natural World is written by Development and Communications Director Janet Robertson. You may contact Janet at 603-968-7194 x 12 or janet.robertson@nhnature.org.

These generous donors made tribute gifts, which were received between July 1 and September 30, 2018:

In honor of Dr. Mark Bard
Anonymous

In honor of the Brochu Family
Anonymous

In memory of Carol Foley
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Annie's Overflow
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In memory of Barbara Ridgely
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In memory of Robert Westerlund
Edward Jones
Jane and Gregory Sangalis
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Naturalist's Legacy Society

Your planned estate gift will help the Science Center continue to achieve its mission to teach about the natural world for generations to come.

Visit the Support Us section at nhnature.org.

AMERICAN MARTEN QUIZ

1. True or False? American martens are currently listed by the State of New Hampshire as a species of special concern.
2. What bright hue is often the color of the American marten's throat patch?
3. What kind of forest do American martens prefer?
A. White pine B. Spruce-Fir C. Beech, birch, maple
4. Which animal is NOT in the same family as American martens?
A. Fisher B. Otter C. Red Squirrel
5. True or False? Martens turn white in winter and brown in summer.

Answers:

1. True | 2. Orange | 3. B | 4. C | 5. False

TRAIL'S END

OUT WITH THE OLD, INN WITH THE NEW!



If you have headed north on Route 3 in downtown Holderness recently, you have no doubt noticed significant changes happening in Kirkwood Gardens. The Holderness Inn is being renovated and will soon become the new offices for architect Ward D'Elia and his partner Cris Salomon. Socrates once said, "The secret of change is to focus all of your energy, not on fighting the old, but on building the new." Since 1981, with the move of the Webster Education Building and offices to our current main campus, your Science Center Board of Trustees has been "fighting the old" to determine how the use of the Holderness Inn fits within our mission. In recent years, Squam Lakes Artisans rented the first floor and we also leased space for a small café, but ongoing maintenance costs and capital requirements for the various ideas proposed were overwhelming.

The Central House was built in 1874 by owner-manager John Davison and rebuilt after a fire in 1895. Its history as a vacation spot for Boston travelers in the late 1800s and early 1900s is significant for Holderness and surrounding communities. The Inn continued to be owned and operated by the Davison family until it was purchased with community support to become the location for the then Squam Lakes Science Center. The Inn was enrolled in 1984 on The National Register of Historic Places due to its rich history. Demolition has been considered multiple times to reduce costs, but the historical and cultural importance to the Town prevented that from happening.

Ward D'Elia recognized that his firm, Samyn-D'Elia Architects, had outgrown its space in Ashland and began looking for a different location. His search combined his love of historical architecture, his zest for a challenge, and his continued interest in the Inn. He approached the Science Center Board about purchasing the building. The Board felt it important to keep Kirkwood Gardens, built in 1995 as a community asset, but was keen on working with Ward so the Inn could be renovated and preserved. In October, final documents were signed, giving Ward ownership of the building while leasing the ground directly beneath it on a long-term basis. The building, which is in sound shape for its age, will be improved, winterized, and brought up to date with current standards. This is an elegant solution for the Science Center, the community, history enthusiasts, and Ward's architectural firm.

An anonymous author once wrote, "Old things are better than new things, because they've got stories behind them." Indeed, the Holderness Inn has 144 years of stories behind it, including 52 years as part of Squam Lakes Natural Science Center. The best news from all of this is that the last chapter has not yet been written. There are more stories to be told. Feel free to stop by Kirkwood Gardens to share the old stories and begin writing the new ones. Rudyard Kipling said, "Funny how new things are the old things." And when you see Ward and Cris, welcome them to town and congratulate them on their new old location.



Central House/ Holderness Inn circa 1920s.

Trail's End is written by Ken Evans, Chair of Squam Lakes Natural Science Center's Board of Trustees. You may contact Ken at evanmead139@gmail.com.

MARTENS *continued from page 1*

able to reach the marten's hunting grounds on snowy access roads and snowmobile trails.

When I asked Jillian how she characterized martens, she quickly replied, "feisty!" That attitude, along with sharp teeth, might not be the best combination for live trapping study animals. A current study takes a different approach, using the unique throat patches paired with the species' voracious appetite. Trail cameras record martens snacking on canned sardines. When the martens reach for the tasty snack they display their unique throat patches. Once an individual is identified, a series of "camera captures" helps illuminate that marten's activity patterns.

How will American martens face the challenges of a warming climate? At the southern limit of their range, martens resemble canaries in the coal mine. My vote is for the gutsy martens but positive choices we each make in energy use can help these and other creatures more than we may know.





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